



## **The influence of depositional fabric and diagenetic processes on physico-mechanical properties in calcarenite rocks**

**G. F. Andriani and N. Walsh**

Dipartimento di Geologia e Geofisica, Università degli Studi di Bari, [nwalsh@geo.uniba.it](mailto:nwalsh@geo.uniba.it)

Many historic buildings and monuments in Apulia (southern Italy) were built from locally quarried calcarenites due to their workability, aesthetic appeal and availability. The physico-mechanical behaviour of these soft and porous rocks are strongly conditioned by depositional fabric and diagenetic characters.

The examined calcarenites, sampled from different quarry districts located in Apulia (southeastern Italy), are from fine- to coarse-grained and belong to the Calcarenite di Gravina Fm. (Middle Pliocene-Early Pleistocene), Lecce Fm. (Late Oligocene-Early Miocene) and Pietra Leccese Fm. (Late Burdigalian-early Messinian).

The study involves, particularly, microtextural analysis and hydraulic behaviour in terms of properties as water absorption, capillarity, hygroscopicity, permeability and porosity to provide a qualitative evaluation of the potential weatherability for the stone.